



Dr. Gao Xiaoguang

Department of Digital and Intelligent Technology | Professor

Biography

Dr Gao Xiaoguang, originally from Liaoning Province, is a Professor and Doctoral Supervisor at Northwestern Polytechnical University. Dr Gao studied Electronic Engineering at Northwestern Polytechnical University from 1978 to 1982 and obtained a bachelor's degree, pursued a master's degree in Electronic Engineering at the same university from 1983 to 1986, and obtained a doctoral degree in Aircraft Navigation and Control from Northwestern Polytechnical University from 1986 to 1989. Dr Gao served as an Assistant Engineer at AVIC Research Institute 613 from 1982 to 1983, and has taught at the School of Electronics and Information, Northwestern Polytechnical University, since 1989. Dr Gao's research interests include artificial intelligence, Bayesian networks, deep learning and nonlinear system control. Dr Gao has served as Principal Investigator for more than 30 projects, including projects funded by the National Natural Science Foundation of China, the National Programme on Key Basic Research Projects (973 Programme) and 30 national defence-related projects. Dr Gao has published more than 60 papers and several academic monographs. Dr Gao has received honours including the Special Government Allowance of the State Council, National Outstanding Key Teacher and Model Teacher of Professional Ethics in Shaanxi Province.

Employment History, including Postdoctoral Appointments

- Feb 1982 – Aug 1983 Assistant Engineer, AVIC Research Institute 613
- Nov 1989 – Present Professor, School of Electronics and Information, Northwestern Polytechnical University

Education

- Feb 1978 – Feb 1982 Bachelor's Degree in Electronic Engineering, Northwestern Polytechnical University
- Sep 1983 – Apr 1986 Master's Degree in Electronic Engineering, Northwestern Polytechnical University
- Apr 1986 – Nov 1989 Doctoral Degree in Aircraft Navigation and Control, Northwestern Polytechnical University

Research Interests

Artificial intelligence, Bayesian network structure and parameter learning, deep learning modelling of complex systems, causal inference, nonlinear system control and sensitivity analysis.

Teaching

Academic special-topic project teaching and dissertation supervision.

Honours and Awards

Special Government Allowance of the State Council, National Outstanding Key Teacher in

Higher Education, Academic and Technical Leader under the “511 Talent Project” of the Commission for Science, Technology and Industry for National Defence, Model Teacher of Professional Ethics in Shaanxi Province, Advanced Female Worker of the Shaanxi Provincial Education Union and nine provincial- and ministerial-level science and technology achievement awards.

Research Achievements

Publications

Selected recent publications are as follows:

- [1] Ru, X., Gao, X., Wang, Y., Liu, X., & Li, Y. (2025). Bayesian network parameter learning with constraint tradeoff. *Information Sciences*, 122839.
- [2] Wang, Z., Lin, X., He, C., & Gao, X. (2026, March). Robust Causal Discovery Under Imperfect Structural Constraints. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 40, No. 43, pp. 36757-36765).
- [3] Wang, C., Wen, Y., Xiong, C., Gao, X., & Wan, K. (2025, May). A Feature Balance Based Multi-Granularity Deep Network. In *2025 10th International Conference on Control and Robotics Engineering (ICCRE)* (pp. 338-342). IEEE.
- [4] Feng, Q., Li, B., Liu, X., Gao, X., & Wan, K. (2025). Low-high frequency network for spatial–temporal traffic flow forecasting. *Engineering Applications of Artificial Intelligence*, 158, 111304.
- [5] Dang, Y., Gao, X., & Wang, Z. (2025). A novel hyper-heuristic algorithm with soft and hard constraints for causal discovery using a linear structural equation Model. *Entropy*, 27(1), 38.

Books and Book Chapters

- [1] *Discrete Dynamic Bayesian Networks Inference and Its Application*, National Defense Industry Press, 2016. Authors: Gao Xiaoguang, Chen Haiyang, et al.

[2] *Introduction to Military Aviation Aircraft*, Northwestern Polytechnical University Press, 2004. Authors: Gao Xiaoguang, et al.

[3] *Study on Air Combat Applications Based on Three-way Decision*, Science Press, 2020. Authors: Li Bo and Gao Xiaoguang

[4] *Multi-UAV Cooperative Control in a Threat-Networked Environment*, Science Press, 2018. Authors: Fu Xiaowei and Gao Xiaoguang